

western stations on the 24th. During this day the pressure fell on the Pacific coast and at all the Rocky Mountain stations, and an area of high pressure consequently moved southward over the Lake region and the Northwest, while southeasterly winds prevailed in the Gulf States. The area of precipitation extended, during the 25th, northward into Wyoming Territory and Nebraska, and on the 26th into Dakota, while the pressure continually fell in the Southwest, but rose north of Illinois and Iowa. On the 26th, 4:35 p. m., the lowest pressure was central in the southwestern part of Indian Territory, and severe hail-storms, with winds of tornado violence, occurred in Red river and Travis counties, Texas, during the evening. The storm-centre moved thence eastward and northward, and was, on the 27th, at 4:35 p. m., central from the southwestern corner of Nebraska to St. Louis, along the Missouri valley. The axis of the oval, which at this time trended east and west, so continued during the 23th, while the area of lowest pressure moved eastward into Ohio and thence northeast over the Lower Lake region. During the 29th two areas were formed, which were central, at 4:35 p. m., respectively, in northern Michigan and Pennsylvania—the latter moved southeastward to the Atlantic coast, and pressure remained very generally low over the Middle and Eastern States and Lower Lakes, with cloudy and rainy weather, but without any well-defined lowest pressure during the 29th and 30th.

Vessels experiencing storms at sea.—Besides the almost continuous gales that prevailed off the coast of the Carolinas and Virginia from the 5th to the 14th, the following notes relating to more distant storms have been received. On the 6th, lat. 29° 40' N., long. 68° 00' W., heavy SE to NE gale; 9th, 27° 21', 75° 03', heavy ENE to NNE gale; 9th to 13th, lat. 27° to 37°, long. 73° to 76°, heavy gale; 10th, lat. 35° to 34°, long. 71°, SE gale backing to NE; 11th, lat. 34°, long. 42°, strong W gale; 12th, off coast of Cuba, severe SE gale; 13th, lat. 42° 13', long. 62° 04', strong NW to N gale; 13th to 15th, lat. 24° N., long. 73° W, heavy WSW to WNW gale; 18th, lat. 36°, long. 67°, heavy SW gale.

TEMPERATURE OF THE AIR.

The general distribution of temperature is shown by the isotherms on Chart No. II. The comparison with the mean temperatures, observed at Signal Service Stations since 1870, is given in the small table upon the same chart, and shows temperatures above the average, excepting in the South Atlantic and Gulf States. The isotherm of 70° passes from Indianola, Tex., to the northern portion of the peninsula of Florida; its course is the same as in April, '76, but is 3° N of its position in April, '75, and 2° to 3° N of its position in April, '74; the isotherm of 40° passes through Bismarck, Duluth, Lake Huron, Quebec, Halifax, and its course is the same as in April, '76, but is 5° N of its position in April, '75, and 5° to 7° N of its position in April, '74. The following monthly means have been received since the chart was printed: Pembina, 33°.1, Virginia City, 36°.5, Fort Sully, 44°.7, and Cape Hatteras, 55°.2.

Maximum and Minimum Temperatures.—The *maxima* above 80° were: 91° at Indianola on the 7th. 88° Boerne, 4th. 87° San Antonio, 4th and 7th. 86° Tybee Island, 25th. 85° Augusta, 24th and 25th; Charleston, 24th; Jacksonville and Savannah, 20th; Wilmington, 24th. 84° Corsicana, 21st; Lynchburg, 24th. 83° Fort Gibson, 5th; Knoxville, 24th; Mobile, 28th; Norfolk and Shreveport, 6th. 82° Galveston, 20th; Louisville, 23rd; Montgomery, 25th; St. Mark's, 22nd; Washington, 24th. 81° Denison, 7th; Marquette and New York, 24th; St. Louis, 23rd; Vicksburg, 22nd. The *maxima* below 70° were: 68° at Barnegat, 25th; Wood's Holl, 24th. 66° Bismarck, 30th. 67° Breckenridge, 21st; Cheyenne, 20th; Santa Fe, 15th. 64° Buffalo, 23rd. 63° Duluth, 25th; Eastport, 23rd and 27th; Thatcher's Island, 26th. 61° Alpena, 20th and 22nd; Escanaba, 23rd. 49° Mount Washington, 24th. 26° Pike's Peak, 26th. The *minima* above 40° were: 42° at Augusta, 12th and 15th; Corsicana, 2nd; Savannah, 14th. 43° Charleston, 10th; Tybee Island, 14th. 45° Jacksonville and St. Mark's, 15th. 46° Montgomery, 5th. 47° San Antonio, —. 48° Shreveport, 2nd. 49° Mobile, 14th; Vicksburg, 3rd. 54° Galveston, 24th. 55° Indianola, 30th; New Orleans, 13th and 15th. The *minima* below 10° were: 9° at Cheyenne, 29th; St. Paul, 2nd. 5° Duluth, 2nd; Mt. Washington, 7th and 12th. 3° Breckenridge, 1st. 2° Bismarck, 2nd. —8° Pike's Peak, 29th.

Ranges of Temperature.—The largest *diurnal* ranges are as follows: 40° at Denver, 30th; 41° Boerne, 20th; 42° Leavenworth, 5th; 38° Cheyenne, 29th, Dodge City, 6th, Morgantown, 16th, Yankton 22nd; 39° Fort Gibson, 5th, Lynchburg, 24th, Marquette, —. The largest *monthly* ranges are: 60° at Denver; 61° La Crosse; 64° Bismarck, Breckenridge and St. Paul; 69° Marquette. The smallest *monthly* ranges are—33° at Thatcher's Island; 34° Mobile and Pikes Peak; 35° Eastport and Shreveport; 36° Barnegat, Cape Lookout, Indianola, Montgomery and Wood's Holl; 25° New Orleans; 28° Galveston; 32° Vicksburg.

Frosts.—On the 2nd, in Ill., Tenn. 3rd, Ill., Md., Va. 7th, Md. 10th, Ark., N. C., Tex., Utah. 11th, Md., N. C., Va. 13th, Va. 14th, Ark., Va. 15th, Md., N. C., S. C., Va. 16th, N. C. 25th, Iowa. 26th, N. Y. 29th, Ill., Ind. Ty. 30th, Kan., Ark., Ill., Ind., Neb., Tenn., Ind. Ty., Mo.

Ice.—The occurrence of cold, dry nights, marked by the formation of ice rather than frost, is noted on the following dates: 4th, Utah; 9th, Utah; 11th, Va.; 12th, N. C.; 18th, 19th, 20th, 21st, 22nd, 23rd, Utah; 24th, Iowa, Utah; 27th and 28th, Utah; 29th, Kan., Neb.; 30th, Ill., Kan., Neb.